GEOGRAPHIC SCHOOL BULLETINS

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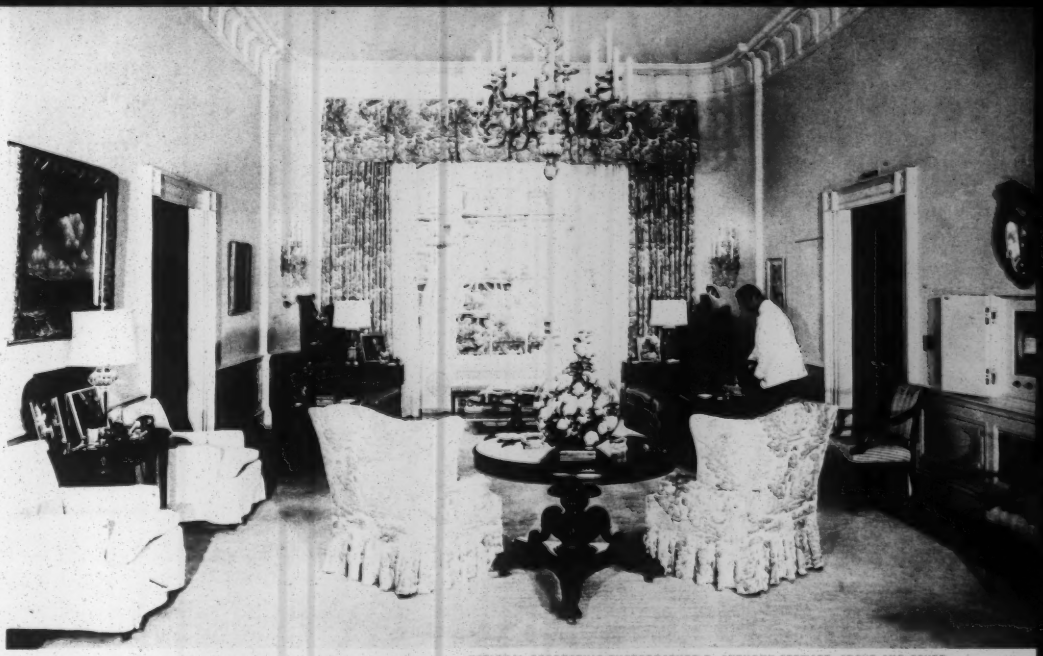
THE PRESIDENT'S HOUSE

also – Saturn rocket, English Channel, Boston

UMI

of hesitating when he signed the Emancipation Proclamation. Jefferson planned the Louisiana Purchase. Theodore Roosevelt determined a canal would cross Central America to link the Atlantic with the Pacific. The second President Roosevelt, Franklin Delano, gave hope to a depression-bogged people with "fireside chats."

In this house Presidents also have passed the milestones of personal life. Grover Cleveland married in the Blue Room, and his daughter was born on the second floor where Presidents' families traditionally have their living quarters. Lincoln's son Willie died in the White House. Recently Mrs. Dwight D. Eisenhower launched two nieces into society at a White House coming-out party. In the comfortable sitting room (above), at the west end of the second-story corridor, Franklin Roosevelt read Dickens's *A Christmas Carol* on Christmas Day to his family.



NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART, ABOVE AND COVER

BETTMAN ARCHIVE

"What is it that makes America's White House unique, and touches with magic all those associated with it?" writes Lonnelle Aikman in the January 1961 *National Geographic*. "Memories, of course, are part of the fascination. So is the knowledge that the man who lives in the White House is subject to hope and pain and error, even as other men.

"But the emotion may go deeper. Americans look to this building for leadership and the wellspring of a security rooted in power that cannot be shared.

"Above all, the President's House . . . is a tangible symbol of the Government the people themselves have chosen."

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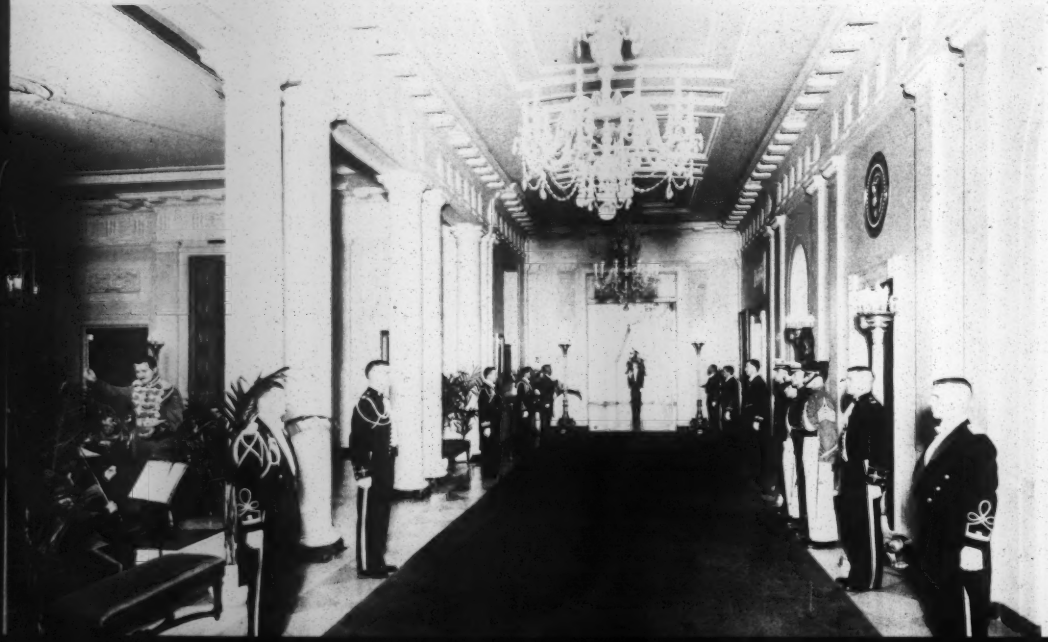
White House Prepares for Its 33rd Occupant

NEXT WEEK a new family moves into the big house at 1600 Pennsylvania Avenue.

When the moving men leave, and 3-year-old Caroline is playing with her doll, and 2-month-old John, Jr., is napping in his crib, perhaps the President and Mrs. Kennedy will have a chance to explore their new home. What will they find?

The White House is an old mansion, yet thoroughly up to date. It is a home, command center, and seat of power. It is a museum; 32 Presidents have lived here, in triumph and tragedy, and each has left his mark. The house is still the scene of lonely decisions and glittering ceremonies.

NATIONAL GEOGRAPHIC PHOTOGRAPHERS B. ANTHONY STEWART AND JOHN E. FLETCHER



At a reception for visiting royalty, military aides resplendent in dress uniform line the entrance hall (left). Soon the President and his wife, preceded by a color guard, will march in as the Marine Band plays "Hail to the Chief."

The grand old house has witnessed many such dignified scenes. It has also seen children skating through the great halls and pillow-fighting in the bedrooms. During the rollicking days of Andrew Jackson's administration, the President gave a farewell party in this same vestibule. The guests (right) hacked at a 1,400-pound cheese, filling their stomachs and their pockets. They demolished it in two hours, but its odor lingered for weeks.

The house has sheltered great men during some of their greatest moments. Here Lincoln carefully steadied a hand weary from greeting guests so no one could accuse him

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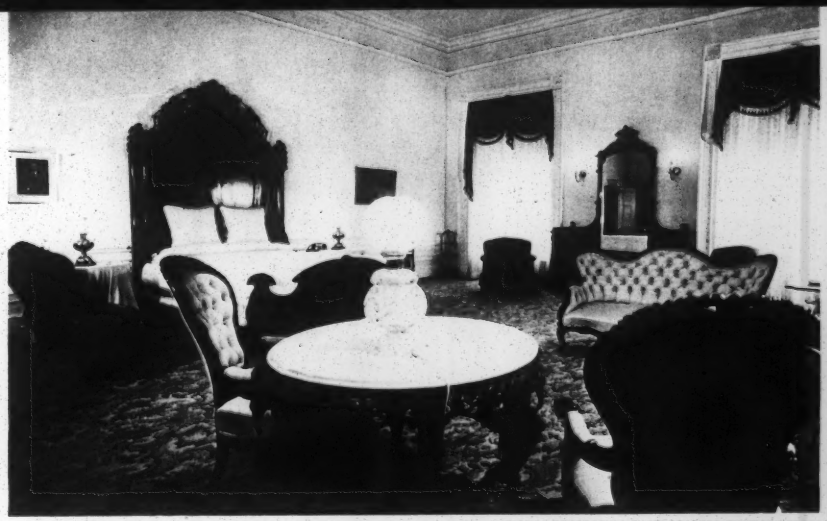


NATIONAL GEOGRAPHIC PHOTOGRAPHER THOMAS NEBBIA

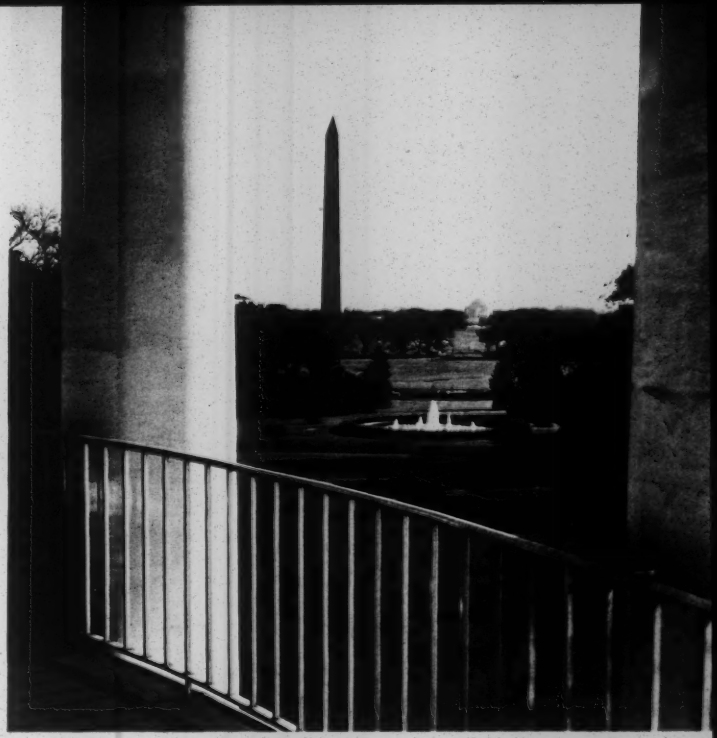
guest dinner party in the State Dining Room.

The West Wing holds the Cabinet Room and the President's office. But it was not always so. Before Theodore Roosevelt won a grudging appropriation from Congress to add the wing in 1902, Presidents worked on the residential second floor. Lincoln used his bedroom (above).

Today the East and West Wings house the 133 men and women of the White House staff. Assistants, aides, and secretaries may themselves have assistants, aides, and secretaries. The White House switchboard handles an average of 7,000 calls a day; the mail room processes 20,000 pieces of mail a week.

For 160 years administrations have come and gone from the White House, each leaving its mark. Chester A. Arthur refurnished the house. He cleared out 24 wagonloads of old furniture. The Gold Room displays a collection President Monroe began with French flatware.

President and Mrs. Kennedy can change nothing on the first floor without the approval of the Fine Arts Commission of Washington.



The living quarters can be redecorated to suit their taste. They may change the functions of rooms. Mrs. Eisenhower's bedroom windows gave a view of the Washington Monument and Jefferson Memorial (above). Mrs. Kennedy's may offer another. L.B.

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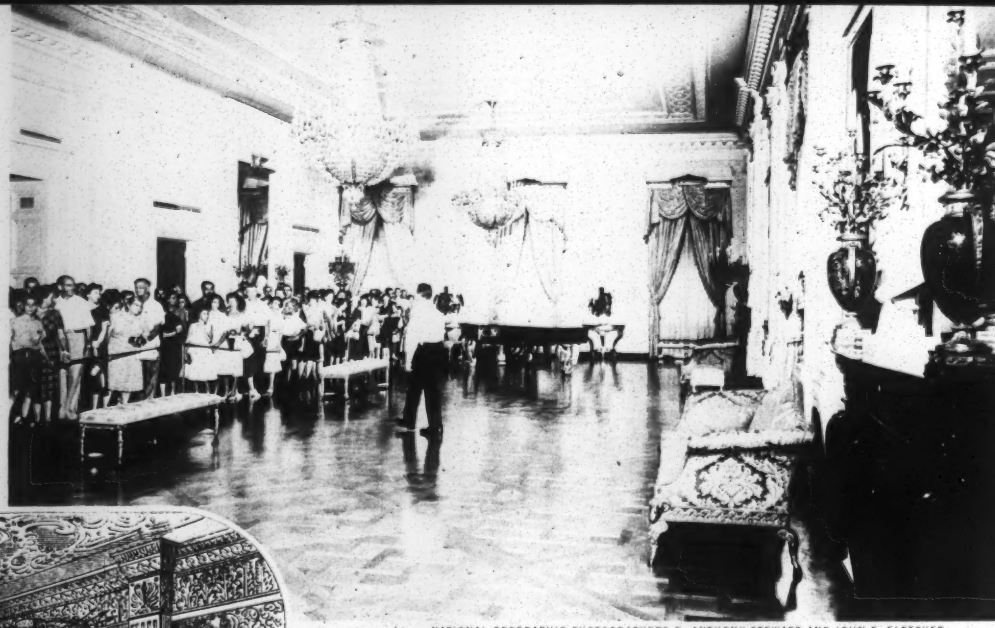
Only George Washington, who chose the site, did not live in the White House. The cornerstone was laid in 1792, before the Capital had moved to Washington from Philadelphia. John Adams moved in, although the house was not finished, and his wife complained she had to hang her laundry to dry in the unfinished East Room (right). The room remained undecorated until President Jackson spent nearly $10,000 on chandeliers, mirrors, draperies, and chairs. Then Lincoln allowed battle-weary Civil War soldiers to rest here (below) and the furniture became so infested



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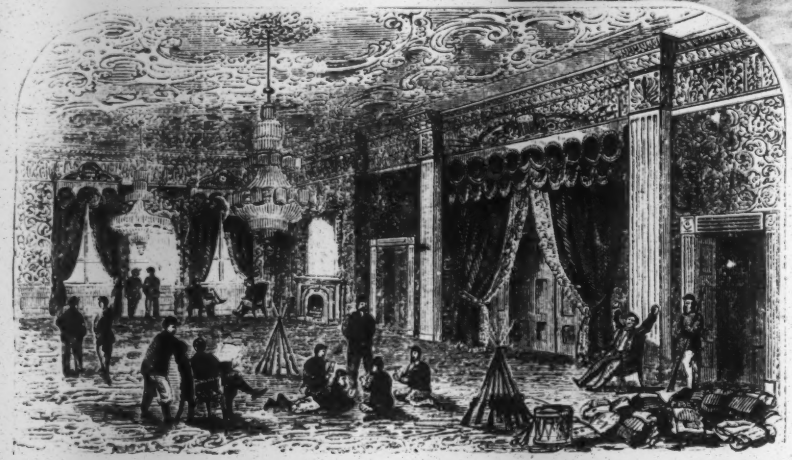
PICTORIAL FIELDBOOK OF THE CIVIL WAR



with vermin it had to be replaced. Today the room dazzles visitors who file through almost daily. (Except for the residential quarters, the White House's historic rooms are open to visitors Tuesday through Saturday from 10 a.m. to noon.)

Expanded, improved, and almost entirely reconstructed a decade ago, the White House now has 150 rooms, including solarium, barbershop, doctor's and dentist's offices, movie theater, swimming pool, and bomb shelter.

The kitchen stands ready to provide tea cakes for a small afternoon gathering or six-course meals for a 100-

FOR U. S. SPACE DRIVE

THE TOWERING SATURN rocket dwarfs men even in its cradle. The eight giant rocket engines that form its body have already blasted into life on the test stand, drinking up 375 tons of kerosene in two minutes.

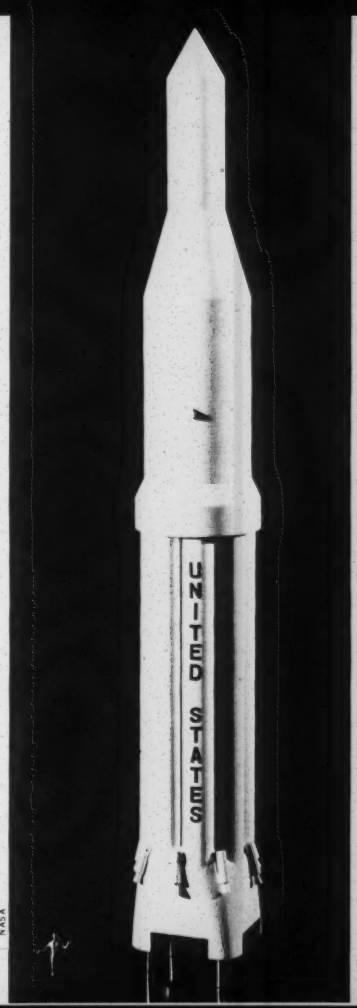
Saturn is America's answer to the powerful Russian rockets that can lift into space far heavier payloads than current United States models.

When it becomes operational—perhaps within four years—it will be capable of placing a two-ton payload on the moon.

With 1,500,000 pounds of thrust Saturn is twice as powerful as any known Soviet rocket now in use, between four and five times as strong as the Atlas, current workhorse of the American space drive.

When it stands ready on the launching pad at Cape Canaveral, Saturn will reach 185 feet toward its element, space. It will be clutched in a service tower 310 feet high, one of the tallest structures in Florida. The tower, mounted on wheels, will roll away before firing time. It was built by the Army Corps of Engineers; will be turned over to the rocket men in April.

Saturn's eight rocket nozzles, each taller than a man, will fire in unison. The fuel will flow through tiny tubes ringing the nozzles, mix with liquid oxygen and burn, throwing out flaming exhaust gases. Slowly, then more quickly the ponderous craft will rise, almost hidden in its own smoke, then disappear into the sky.



The farther away from Earth it gets, the better it will perform. Without atmosphere to hold it back it can soar freely. It carries its own oxygen, so needs no air. Like all rockets, it moves by throwing out gases, needs no atmosphere to "push" against.

When the eight engines of the first stage die, two upper stages, burning liquid oxygen and liquid hydrogen, will take over. The second stage will cluster four engines, the third will have two.

Saturn's mission might be to orbit 19,000 pounds of scientific instruments—and scientists themselves. It may hurl a 5,000-pound deep space probe, or drop 4,000 pounds to a soft landing on the moon.

Even mighty Saturn, however, will not be able to put men on the moon with enough equipment to get them back again. That task will await the Nova, a monstrous "bird" not yet on the drawing board.

Once planned to have four engines, each as powerful as the Saturn's entire cluster of eight, Nova today has no set shape, size, or power. It may carry atomic powered rockets in its upper stages, and must be tailored for them. The National Aeronautics and Space Administration (see *School Bulletins,* November 14, 1960) expects Nova will generate between six and twelve million pounds of thrust. F.S.

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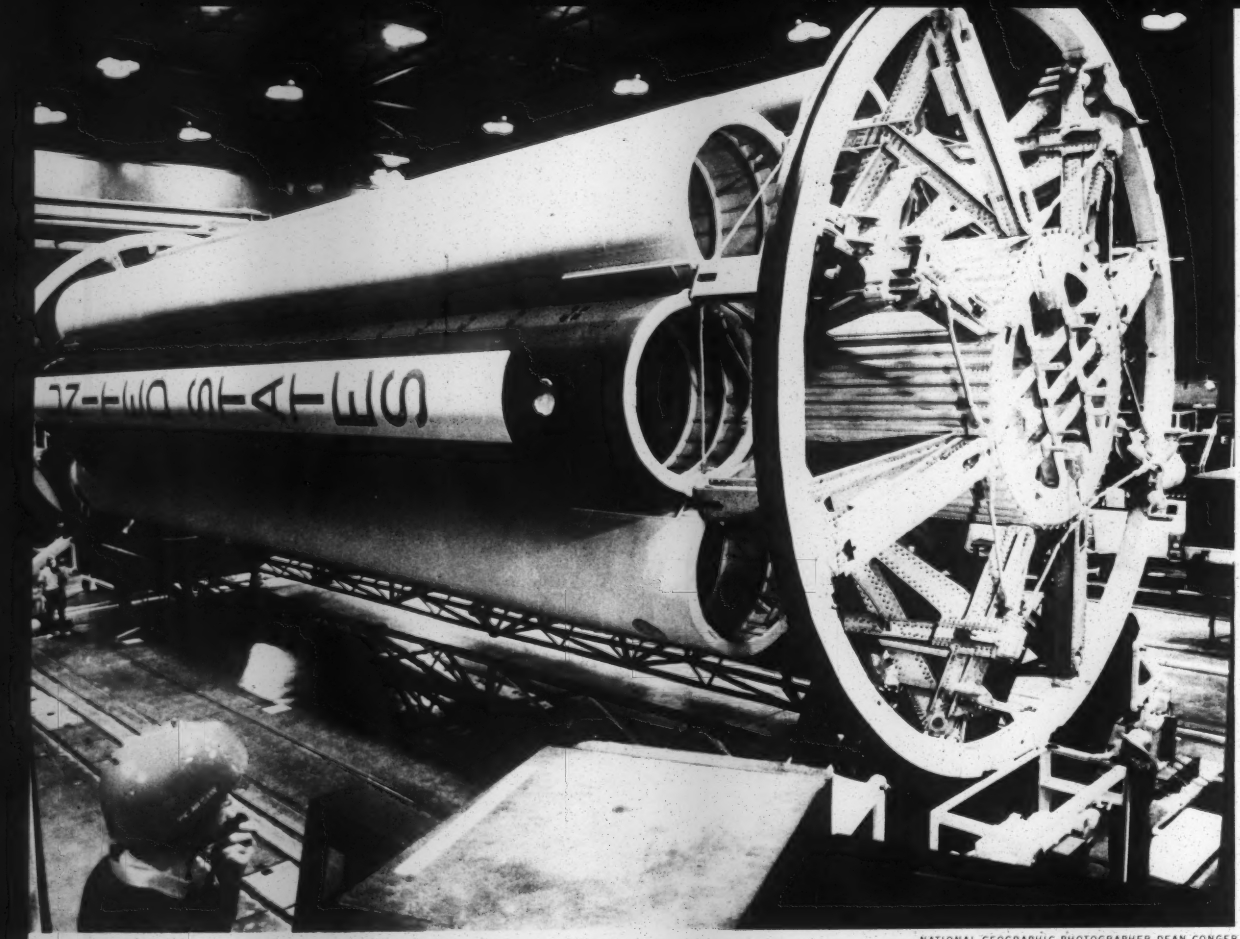


NATIONAL GEOGRAPHIC PHOTOGRAPHER DEAN CONGER

NEW MUSCLE

Readying Saturn—In its huge cradle, the rocket takes shape in the George C. Marshall Space Flight Center, Huntsville, Alabama. Like the pipes of a mighty organ, eight fuel and oxygen tanks, each 70 inches across, cluster around a central, 105-inch tank. The wheels turn the body while it is being built.

For a vehicle designed to fly fast and far, the Saturn poses some odd transportation problems. It is too big to be trucked or air-lifted to the launching station at Cape Canaveral, Florida, so will make the trip by water. A specially-designed barge, already delivered, will float the rocket from Huntsville, down the Tennessee River to the Ohio and Mississippi Rivers to the Gulf of Mexico, then around Florida to Port Canaveral.

Britain was once part of the mainland. Stone-age men wandered the continent, unbroken from Scotland to Asia. Climates changed. During warm periods hunters stalked sabre-toothed cats in English valleys. Then sheets of ice pushed them south.

When the last glaciers retreated—about 25,000 years ago—the Atlantic Ocean pushed a finger along the southwest coast of England and formed a gulf. But it was stopped by a barrier of land so broad that it joined England not only with France, but with Germany and the Netherlands. Men who had learned to till fields and raise crops wandered north as warmth returned.

Sometime during this period—at least 8,000 years ago and possibly many more—England sank. Slowly, water flooded the plain that connected England and Germany to make the North Sea. The Atlantic met the new sea, and Britain became an island.

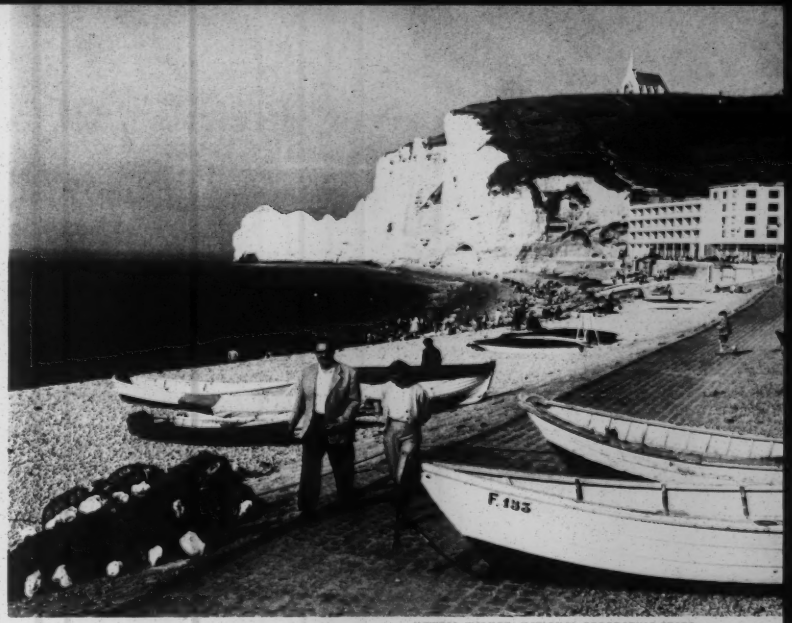
Today the Channel is 350 miles long and varies in width between 150 and 20 miles. The French call it *La Manche*—the sleeve. The forearm starts where Portland and the Cherbourg Peninsula narrow the west Channel. The Strait of Dover forms the wrist.

Crossing the Channel by boat has terrorized generations of queasy travelers. Gales, fog, and rough water are the rule. The meeting of the Atlantic Ocean and North Sea in this shallow trough creates whirlpools, cross currents, and powerful tides.

Since 1802 schemes for linking the Isles to the Continent across the Strait of Dover have flowered and faded. It was a Victorian dream that a gentleman, his wife, children, and their nanny could bundle themselves into a first-class railway carriage, plant their feet on hot water bottles, open a wicker luncheon basket, pass comfortably beneath the storm-tossed sea, and disembark in Paris.

But the British military continually gave any such project a red light. Generals of the 19th century had nightmares of enemy soldiers gushing into London's Victoria Station by the trainload.

Today the Channel is no longer an invasion-proof moat. Modern warfare has made even the broad Atlantic an outmoded defense.



HOWELL WALKER, NATIONAL GEOGRAPHIC STAFF

Again plans are afoot to dig a Channel tunnel, or chunnel, as the British call it. The proposed tunnel would burrow from an entrance behind England's Shakespeare Cliff, between Dover and Folkestone, to a French terminus between Calais and Boulogne. The passageway beneath the Channel would be about 36 miles long, more than 20 of them under the water. If it is built, electric trains will speed back and forth with passengers, cars, and freight. Ventilation problems will be too difficult to permit auto traffic, even if motorists should feel brave enough to risk breakdowns, accidents, and claustrophobia. L.B.

UMI

English Channel

THE ENGLISH CHANNEL, that narrow body of water separating Great Britain from mainland Europe, demonstrates the sovereign role geography plays in shaping history and economy.

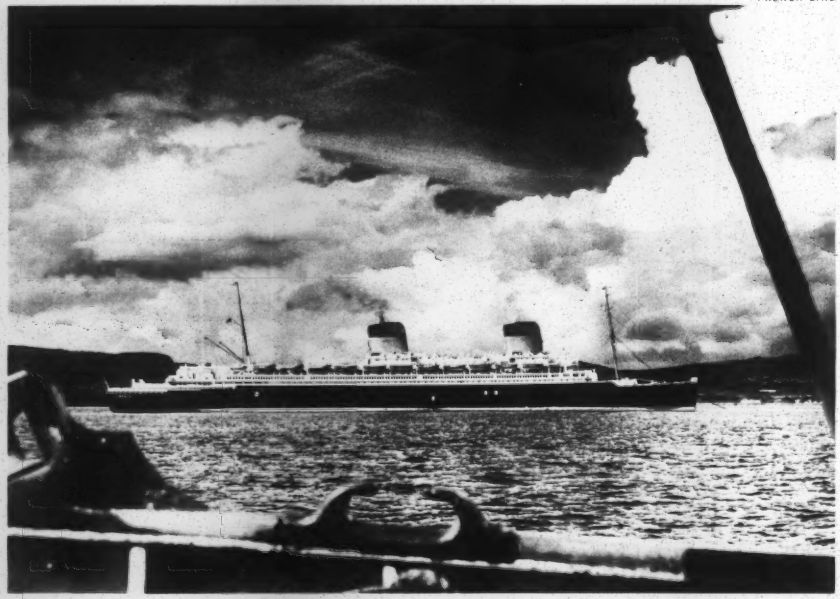
A relatively minor geographic feature, the Channel nevertheless made Britain an island thousands of years ago, bestowing the almost unconquerable isolation necessary for it to become the world's strongest power.

At the same time, the Channel dictated that the British become a nation of sailors to enable them to trade with France, 21 miles away, the rest of Europe, and eventually the entire world.

The sun has dimmed on the globe-girdling empire that Britain created, and her lion's share of trade has dwindled, but the English Channel still does its old job of determining the island kingdom's destiny. Britain is still a bit aloof from Europe but its trading vessels are found in every port of the world.

Aside from its grandiose role, the Channel as a workaday bit of geography offers fishermen harvests of pilchard and mackerel. It washes pleasant beaches, like that at right at Étretat, beneath the chalk cliffs of Normandy.

Above all, the Channel means trade. Nearly 2,000 years before Christ regular shipments of copper, tin, and lead left Channel ports in Britain for the Biscay coast to connect with a land route to the Mediterranean. Britain has fed herself with trade ever since. From Dover, Portsmouth, Southampton, and Plymouth go ships laden with England's textiles, automobiles, ships, machinery, china, cutlery. In come food, tobacco, raw cotton and wool, petroleum, rubber. Passenger liners, like the French *Liberté* (left) anchored in Plymouth Harbour, bring tourists.



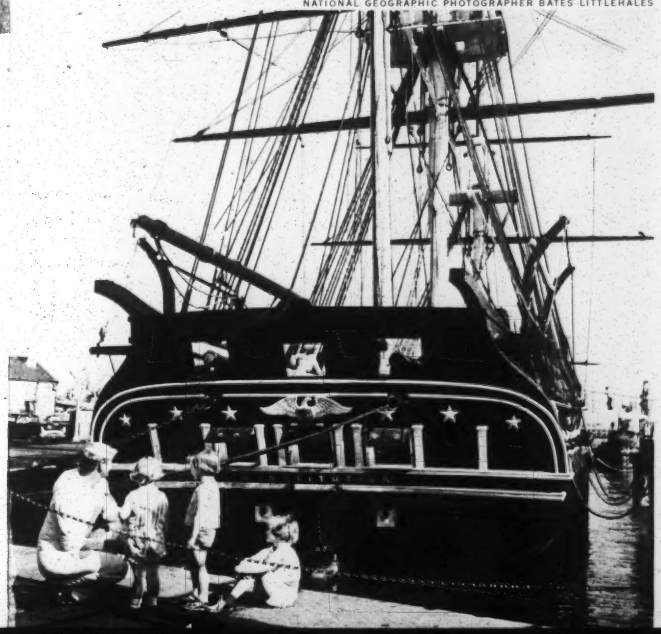
FRENCH LINE

France, too, sends merchant fleets through the Channel. From Calais, Boulogne, Le Havre, and Cherbourg her laces, clothing, fabrics, wines, perfumes, and automobiles travel to world markets. In come the grains, iron ore, coal, coffee, and petroleum that keep her people fed and factories humming.

years after the Pilgrims landed at Plymouth Rock.

They developed fisheries that still flourish—and make Boston today the busiest fish-port in the United States. In the Fish Pier (right) 15 million pounds of frozen seafood may be stored at one time. Mackerel and smelt are stacked like kindling wood, scallops are bagged, fillets are boxed. The worker is removing a big halibut.

NATIONAL GEOGRAPHIC PHOTOGRAPHER BATES LITTLEHALES



The famed exclusiveness of Boston society, now crumbling but still in evidence, got its start as soon as there was a second group to look down on. Some Quakers arrived in the 1650's—and were promptly beaten, tortured, and expelled by the Puritans, who disapproved of their religion.

As the port grew, floods of people came—from all New England and from overseas. Waves of Irish settlers were, in turn, discriminated against, and want ads in post-Civil War days ended, "No Irish need apply."

Descendants of this despised group multiplied until today Boston is called an Irish city with "more persons of Irish blood in it than there are in Dublin." One of them will take the oath of office as President of the United States next week.

The same process assimilated the Italians, Canadians, Poles, and the rest who settled at the Hub.

Boston's port has not kept pace with New York's, but it is the foundation of much of the city's wealth. Shipbuilding was one of the most important early industries.

The famous frigate *Constitution* (left), known as Old Ironsides, was launched in 1797, and victoriously battled the Algerians, the English,

JOSEPH BAYLOR ROBERTS, NATIONAL GEOGRAPHIC STAFF

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BOSTON — New President's Hometown

BOSTONIANS proudly call their city the Hub—short for "hub of the universe."

It's not so much that they really believe that all creation revolves around Boston, but just a New England habit of taking whatever nature or chance provides and making the most of it. The nickname comes from a line by Oliver Wendell Holmes: "Boston State House is the hub of the solar system." In the same way their ancestors took the sneering term "yankee" from the British, accepted it, and made it finally a proud synonym for American. The early New Englanders turned rocky land into stone-fenced fields, and helped steer a group of colonies through war to independent nationhood.

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

Some of the earliest and most stirring meetings of the Boston patriots took place in the "Cradle of Liberty," Faneuil (pronounced fan'l) Hall, still standing downtown (left) and still a civic meeting place. Bostonians don't like to let go of a good thing. The area surrounding the hall is a market place, as it was in 1742 when Peter Faneuil donated it to his adopted city. Hungry citizens still come here to "feed magnificently" (above) as they did before the Revolution—although the conversation is more likely to concern mammoth redevelopment projects or elevated freeways than the injustices of the British Crown.

The first Bostonians were Puritans who set up housekeeping on a peninsula at the mouth of the Charles River in 1630, ten

and the French. It has even conquered old age, and floats proudly today at the Boston Naval Shipyard.

In the 1840's and 1850's, Boston grew on the riches of the China trade, and the harbor was home to clipper ships—sailing vessels named for their ability to "clip off" the miles.

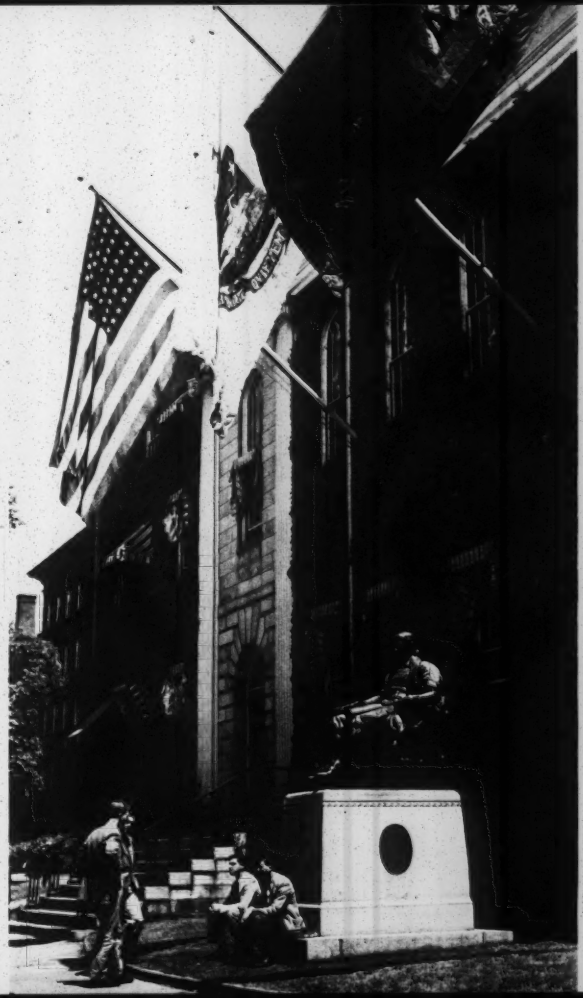
Much of the profit went into cultural activities that earned Boston the title "Athens of America."

A long tradition of education started with the Boston Latin School in 1635, the oldest public school in the United States. Boston English High School, opened in 1821, is the oldest high school in the country.

Today Boston is a center of higher education, with institutions in and around it including Harvard (right), Boston, and Tufts Universities, the Massachusetts Institute of Technology, and Radcliffe College.

The arts benefit from a long Boston tradition. The first American composer, William Billings, and the first noted architect, Charles Bulfinch, worked here.

In 1808 Harvard students formed the Perian Sodality, a musical group which gave birth to the famous Boston Symphony Orchestra.



NATIONAL GEOGRAPHIC PHOTOGRAPHERS B. ANTHONY STEWART AND JOHN E. FLETCHER

Boston painters include Gilbert Stuart and Winslow Homer.

But it was in literature that Boston shone brightest. A large part of great early American writing came from the city and nearby. Longfellow, Lowell, Hawthorne, and Holmes wrote here. Thoreau used to come up from Concord to talk with his publisher. As a boy, Ralph Waldo Emerson herded cows to Boston Common, the oldest public park in the United States, now the site of an underground garage.

The Common symbolizes Boston's changes. The Frog Pond, where Puritans once ducked nagging women and anyone who disobeyed the strict Sabbath laws, now is a favorite splashing spot for young Bostonians.

The park even reflects Boston's changing attitude toward Britain.

Throughout the old sections of Boston are vivid reminders of the Revolution: Faneuil Hall, the site of the Boston Tea Party, Paul Revere's house, and the Old North Church, where two lanterns signaled the start of his famous ride.

But on the Common there is a memorial of thanks from British sailors who enjoyed Boston's hospitality during World War II. F.S.

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